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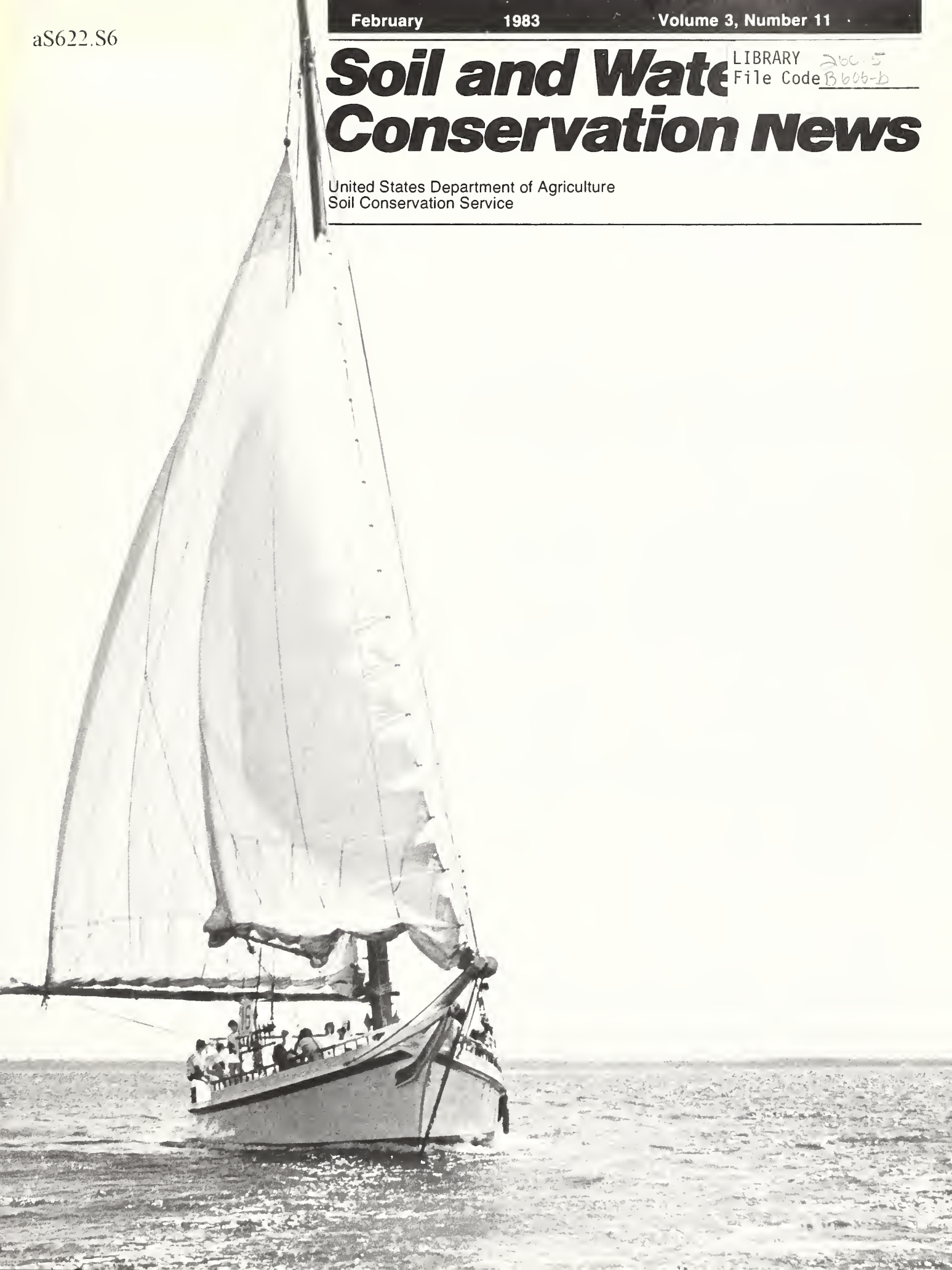
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Comments:

*From the
SCS Chief*

Spreading the Conservation Message Through Conservation Education

Education is an investment in the future. Over the years, the Soil Conservation Service has invested much time and hard work in conservation education. I believe that those efforts have been well spent.

Our goal, to increase public awareness of the need for healthy natural resources, has only been partly met. Education is a continuing process, and the job is never complete.

While reaching citizens of all ages with our conservation message is important, I think we must specifically reach children in elementary grades. To do this we need educators on our team.

SCS field personnel are in an excellent position to work with teachers one-to-one and through teacher workshops. I know many of our people are already doing a great job in this area.

We all share the responsibility for conservation education. Many of our State-level employees are working with State departments of education and colleges and universities on teacher training programs in conservation. But the best conservation education is done locally by SCS and conservation district people who help educators teach about very real and local conservation efforts.

I urge you all to continue, or expand, your conservation education efforts. This Nation needs more active and interested stewards of land and water resources.



Cover: Conservation education afloat. High school students from southern Maryland, aboard a skipjack on the Chesapeake Bay, learn how activities on the land affect the water quality of the bay. Agriculture is one of the bay's major pollutants. (See article on pages 6 and 7.) (Photo by Katherine Gugulis, public affairs specialist, SCS, College Park, Md.)

John R. Block
Secretary of Agriculture

Peter C. Myers, Chief
Soil Conservation Service

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Conservation Education

Winning Teachers, Winning Districts

The National Association of Conservation Districts (NACD) and Allis-Chalmers have announced the winners of their 1982 Environmental Conservation Education Awards Program. The contest is designed to emphasize the value of conservation education in the schools and to recognize the most outstanding conservation education programs developed by teachers and conservation districts across the Nation.



Christopher Blakeslee from Bailey, Colo., is the NACD-Allis-Chalmers 1982 Teacher of the Year.

Winning Teachers

Christopher Atkins Blakeslee, who teaches fifth and sixth grades at the Windy Peak Laboratory School in Bailey, Colo., has been named 1982 Teacher of the Year. He was chosen for his innovative approaches to teaching, using direct experiences as well as opportunities for decisionmaking and value judgments.

"I would like to instill a tiny spark of interest and curiosity in the soul of each student I come in contact with, something that might one day develop into a burning passion for astronomy, forestry, soil science, art, photography . . . something that can be pursued in the future," Blakeslee said.

The Colorado teacher holds an intense belief that we have a responsibility to ourselves and to future generations to use this planet and its varied resources wisely, and to the greatest good. "I teach because the respect for the biosphere cannot be legislated, cannot be mandated to the people. It can only be achieved through careful teaching and sharing of Nature's beauty and mystery between individuals, one to one," Blakeslee said.

Blakeslee was nominated for national recognition by the Jefferson Soil Conservation District in Lakewood, Colo.

The runner-up Teacher of the Year is Bob Rose, a 10th grade teacher for Paola High School in Paola, Kans. His multifaceted program involves an environmental education emphasis which is directed toward all students in grades kindergarten through 12. The program is called PEEK/12, for "Program for Environmental Education, Kindergarten through 12th grade." The program centers around three main parts: that which is best learned out-of-doors; the interrelatedness of all components of the environment; and intercommunication between teachers, students, and citizens of all ages.

"PEEK/12 is designed to show students how their natural environment is the basis for our culture and how society's needs and activities are affecting the natural components of our lives," Rose said.

Secondary students are directed in designing environmental lessons, which they present to elementary students. The secondary students learn by teaching, while the elementary students learn by doing hands-on activities. Both groups learn to understand and accept the other, while teachers are able to measure progress in character development and academic skills. Rose was nominated by the Miami County Conservation District in Paola, Kans.

Regional winners in the teacher category are: Northeastern region, Paul Seigrist, Calhoun County High School, Grantsville, W. Va.; North Central region, Lonnie Knapp, Clear Lake Community School, Clear Lake, Iowa; Southeastern region, Judith Martin, Eastside Elementary School, Clinton, Miss.; South Central region, Robert Miller, Crowder High School, Crowder, Okla.; and Pacific region, Steven W. Pellegrini, Yerington Intermediate School, Yerington, Nev.

Winning Districts

The Topanga-Las Virgenes Resource Conservation District (RCD) in Topanga, Calif., was chosen 1982 Conservation District of the Year. During this past year, the Topanga-Las Virgenes RCD's education program included a variety of projects aimed at adults, youth, and their community. An important aspect of their efforts is the Malibu Forestry Nursery/Nature Center Project which reached 4,650 students from inner-city schools.

The project's purpose is to develop an in-school and outdoor education program for inner-city children, many of whom come from economically disadvantaged homes and are non-English speaking. A 5-acre site for the program is provided through the cooperation of the Los Angeles County Fire Department, Forester and Fire Warden Division. The site houses an experimental tree nursery, a nature center exhibit building, and a nature trail.

In addition to budgeted district funds, grants to the district from the California Department of Forestry, the ARCO Foundation, and State of California License Plate Funds provide the means for the

RCD to carry out special interpretive, hands-on, activity-oriented programs.

The runner-up is the Cambria County Conservation District in Ebensburg, Pa. The district has a full-time conservation education coordinator to implement the district's varied conservation education program. The coordinator works with 13 separate school districts in the county on a full-time basis. Programs include providing films and slides on conservation topics; offering scholarships to teachers and students to attend conservation workshops and camps; conducting field trips and assisting in developing trails and outdoor learning centers; and distributing conservation materials.

The district has its own outdoor learning center and nature trail at Dumans Lake. Because the area had many swampy parts, more than 300 feet of bridges had to be constructed, including a 180-foot boardwalk. The district works with major universities and colleges in the area and maintains a library of environmental education materials, which are available to all individuals and organizations in the community. Many weekend and evening programs are conducted for area youth. The district publishes a monthly environmental education newsletter which goes to over 200 county teachers and lists all programs available during the coming month, gives a summary of past activities, and lists valuable resource materials.

Regional winners in the district category are: North Central region, Lee County SWCD, Amboy, Ill.; Southeastern region, Lexington SWCD, Lexington, S.C.; South Central region, Lower Delta SWCD, Donaldsville, La.; Southwestern region, Gunnison SCD, Gunnison, Colo.; and Northern Plains region, Edmunds County CD, Ipswich, S. Dak.

Charlotte Nichols,
director of communications, National Association of
Conservation Districts, Washington, D.C.

New Environmental Education Activities Tested in Iowa

"Lie down on the floor and close your eyes. Imagine yourself shrinking. You're getting smaller, smaller . . . you're so small you can't be seen with the naked eye. You're a carbon atom, and you're going to take a long journey over the next 5 minutes. . . ."

That is the beginning of one of 175 new environmental education activities that some 200 Iowa educators are field testing this school year. Each activity is explained on a single sheet of paper, listing the title, objective, materials and preparation needed, and time needed. The activities are set up for the students to explore the topic, share their reactions, and then apply the activity to their everyday life.

"Many of the environmental education programs now in use do not go beyond the awareness stage," says Duane Toomsen, environmental education consultant with the Iowa Department of Public Instruction. "We're excited about these activities because they're set up to direct students into applying the activity to the real world—to make judgments and decisions."

Toomsen was part of a 20-member writing team that spent 6 weeks last summer at the University of Northern Iowa to write the activities. They are based on 11 major topics: air, water, soil, human habits, mineral resources, population dynamics, land use, production and distribution, heritage, natural habitat, and community responsibility.

After field testing, the activities will be printed next summer for widespread use in grades kindergarten through 12 in Iowa.

Lynn Betts,
public affairs specialist, SCS, Des Moines, Iowa

Learning Is Easy the Hard Bargain Way

Children's happy voices ring through the woods and across the meadows as they collect eggs; milk the cows; and feed the cattle, sheep, goats, and pigs. When the morning chores are done, the children head for the shore of the nearby river, the creek, and the swamp. Finished exploring these, they hike in all directions searching for animal tracks and other signs of wildlife. Before lunch, they snack on apples that they pick in the orchard.

This might be a routine morning for children who live on a farm, but it is an extraordinary morning for these children. They are among the thousands of fifth graders from mostly suburban or urban parts of Charles and Prince Georges Counties, Md., who spend 2 days immersed in farm life at the Hard Bargain Farm Environmental Center in Accokeek.

The farm is along the Potomac River, and from a hilltop near the farmhouse, visitors can see Mount Vernon across the river and the Washington Monument to the north. The Alice Ferguson Foundation, Inc., a nonprofit organization dedicated to conservation education, runs the 250-acre farm, which has been hosting school groups since 1965.

A working farm, Hard Bargain has dairy cows, beef cattle, pigs, goats, and chickens as well as fields of wheat, soybeans, barley, and field corn. There are six vegetable gardens, an apple orchard, fields of hay crops, and pastures.

"We try to treat the children who visit us at the Hard Bargain Farm like family," said Katherine Powell, executive director of the Alice Ferguson Foundation. "And like family, they have to help with the chores—collecting the eggs, milking the cows, and feeding the livestock."

"I used to take it for granted that all children knew that eggs come from chickens, pork comes from pigs, and so on," said Hank Xander, farm manager since 1971. "But I've learned differently. When the children reach under a chicken and bring out an egg, most of them are very surprised."

"We're running the farm much as it

would have been run in the late 1940's," said Xander. "We have modern equipment for field work, but we still do many things by hand and the children help."

The foundation sells some of what the farm produces and the proceeds go back into maintaining the farm, which is mainly demonstrational. "Our specialty," said Xander, "is children."

The children who visit Hard Bargain Farm learn not only about the day-to-day chores but also about soil and water management. As part of their experience, they visit the stock watering tank in the 15-acre main pasture. The tank and the underground system which feeds it were installed in August to solve a number of problems.

Water seepage from underground springs in a slope adjacent to the pasture was collecting on a dirt road which runs between the slope and pasture. Besides eroding the soil, the seepage was creating an unsightly mudhole, breeding insects, making the road difficult to travel, and wasting a tappable resource.

The Alice Ferguson Foundation called the Soil Conservation Service for help. Mickey Shockley, SCS soil conservationist for Prince Georges County, and Buddy King, SCS civil engineering technician, drew up a plan to install a system of underground perforated drain tile in the slope to draw water to a stock watering tank.

The 4-inch corrugated plastic pipe collects hillside seepage and runs it into a collection box where sediment can settle out before the water flows to the 500-gallon cement tank. A concrete pad around the trough protects the soil from erosion. A pipe carries overflow from the tank to a roadside ditch lined with rock riprap. Disturbed areas were seeded with pasture grasses.

The Maryland Association of Soil Conservation Districts awarded the foundation a \$250 conservation grant for the project and the Crescent Cities Jaycees donated \$1,000. The Jaycees also spent two August weekends helping to install the system. Shockley says that teams of four or five Jaycees took turns moving the 4,500-pound cement tank into place.

The farm has solved the problem with seepage and now has a natural water supply in its main pasture. Powell said, "We were filling old tubs with water twice a day near the barn and the cattle had to walk to the barn from the pasture to get a drink. We are hoping to start a cow-calf operation where we can sell some calves and keep a few for replacement. This tank is going to help us do it."

With SCS assistance, the foundation is planning on extending the tile system to set up another watering tank on a lower pasture. Since 1978, SCS has also assisted with a tile drain feasibility study, wildlife management, and stripcropping on the farm. "We want this to be a well-managed farm to show the children how soil and water resources can be protected," said Powell.

The fifth graders who visit the Hard Bargain Farm enjoy a double-rich experience. They get to live on a farm for 2 days and participate in an excellent conservation education program. The U.S. Department of the Interior's National Park Service provides specially trained guides who acquaint the children with the farm's four nature trails, Potomac River shoreline, and other points of interest.

The children test water quality and study life in the creek, stream, marsh, and pond, which a local beaver currently has under construction. The Park Service guides also help the children identify the

area's wide variety of trees, shrubs, and wildlife. The children participate in a set of outdoor problem-solving exercises which include helping all members of their team climb over a 6-foot-high barrier in a limited time. In another exercise, teams must retrieve a bucket from the opposite side of the stream without going into the water.

Overnighters stay at the lodge which can accommodate 40 students and 2 teachers. The lodge has a kitchen and a large meeting area. The children gather firewood and cook their meals outside when the weather permits. In the evening, they often gather around a campfire in front of a log cabin on a hill.

A National Park Service instructor on the farm, Eileen Watts, said, "It is most important for the children to develop a real awareness of the environment and how it is all tied together. We hope they grow to love and appreciate what they experience here."

"We want the children who visit the Hard Bargain Farm to take away with them a good overall feeling about nature and farm life," said Powell. "When they are adults, we want them to remember why it is important to keep places like farms and woods for people to enjoy."

Nancy M. Garlitz,
associate editor, *Soil and Water Conservation News*, SCS, Washington, D.C.

Students from a Charles County, Md., elementary school learn how this stock watering tank at the Hard Bargain Farm uses a previously wasted water supply to benefit the farm's livestock. The children are munching on apples they picked in the farm's orchard.



Do Plants Eat Soil?

How is a desert created? Where does a McDonald's hamburger come from? What do plants need to grow? Do they eat soil? Does grass have flowers? What kinds of birds and animals do you see? Can you tell what kind of soil this is by feeling it?

These are just a few of the topics explored and investigations used by instructors to teach students about natural resources and conservation during the annual sixth grade tour sponsored by the Lewis Soil Conservation District (SCD) in Idaho. It's the highlight of the school year for over 200 students who come from Nez Perce, Lewis, and Idaho Counties. It's also a very important day for the Lewis SCD, which has sponsored the event for the past 9 years.

The 4-hour tour is held in May each year at Winchester State Park near Winchester, Idaho, in Lewis County. An SCD supervisor opens the tour with a short welcome and introduction.

During the day, students rotate among eight teaching stations which break the complex mass of natural resource components into more simple topics. The stations include soils, plants, forestry, fire control, wildlife, and wildlife habitat. A nature trail helps tie the complex picture together—and provides an opportunity for the students to clean up litter left by previous park users.

The instructors are local employees of State and Federal agencies, including the Idaho Department of Lands, Idaho Fish and Game Department, Forest Service, and Soil Conservation Service.

One of the most popular stations is located on the banks of Winchester Lake. After a lesson on boating safety, students put on life jackets and climb into canoes to paddle around the lake for about 5 minutes. The lesson on boating safety has paid off—not one canoe has tipped over even though well over 2,000 students have participated in the experience.

Kathy Hasselstrom, the Lewis SCD clerk, has organized the tour for the past 3 years and sends invitations to the schools in the three-county area. Six schools participated in the 1982 tour. The

schools provide their own bus transportation, and the students and teachers bring picnic lunches.

Many of the teachers supplement the day's experiences with other subject matter when they return to the classroom. Class discussions help bring about a better understanding and reinforce the concepts learned. Students are often given an assignment to write about the station they liked the best or the most interesting thing they learned.

"These kids are tomorrow's leaders," says Joe Zenner, SCD chairman. "If this tour helps light just a small spark that will help make them want to take better care of our land and water, then we're accomplishing a great deal."

Sharon Norris,
public affairs specialist, SCS, Boise, Idaho

Youth Range Camp

This year I attended the South Dakota Youth Range Camp the 8th through the 11th of June. When I registered for camp, I hardly knew the definition of range let alone what a range camp would be like.

We started out identifying 40 of the various grasses, forbs, and shrubs. I never paid attention to what the lifespan or season of growth for a plant might be before, but I learned.

I found it interesting that under grazing, some grasses tend to increase in growth while others seem to get shorter. I also learned that some grasses grow better in some soils than in other soils.

By finding out these things, I learned how to treat and improve rangelands. Now I know what a range is and also what range management is and how it helps improve the range for the future.

Todd Riggs,
10th-grade student,
Spearfish, S. Dak.

Todd's attendance at the camp was sponsored by the Lawrence Conservation District, St. Onge, S. Dak., and the Bank of Belle Fourche, Spearfish Branch.

Learning on the Land and on the Water

Summer camp took on new meaning for 30 high school students who attended a natural resources camp sponsored by the Southern Maryland Resource Conservation and Development (RC&D) Board.

The week-long camp was held last June at the Elms Environmental Center in St. Marys County bordered by pine forests, marshes, and the Chesapeake Bay. It was designed, says Dennis Flynn, RC&D coordinator, to teach the young people about the resources and heritage of St. Marys, Charles, and Calvert Counties.

"The population in the tri-county area is fairly stable. Farming, forestry, and seafood are the major industries. We wanted to show these kids the importance of their resources and their effect on the economy and ecology of the region," Flynn said.

And show them they did! Although there were classroom lectures on geology, agriculture, forestry, water supply, and development, the focus was on the outdoors. That included learning how to compute basal area in a forest to determine the amount of marketable timber. They also learned what type of management techniques were needed to improve production.



A visit to an abandoned gravel mine pointed out the economic importance of the area's sand and gravel resources as well as the need for sediment control. Back at the center, the youngsters used local products to mix their own concrete for a dry well.

The youngsters also learned how to survey and lay out conservation practices. They visited conservation district supervisors' farms to get a firsthand look at how crop rotation, no-till farming, stripcropping, and grassed waterways conserve soil and water.

Two nearby marshes served as excellent examples of how wetlands are important breeding areas for bay life. Seines cast into the marsh and bay brought to the surface a variety of plant and animal life.

After classroom discussions on the role natural resources play in development and urban growth, the students played a board game similar to Monopoly where making a fortune depended on making wise land use decisions.

A visit to an archeological dig at historical St. Marys City uncovered relics that showed that early settlers relied as much upon products of the land and water as people do today.

Highlighting the week was a sail on the "Dee of St. Marys," the newest addition to Maryland's skipjack fleet. Once

aboard, the young people learned about the life of a waterman from Captain Jackie Russell and tasted a local delicacy—raw oysters—fresh from the bay. PM Magazine, a syndicated nightly television program, filmed the sailing and seining activities for a 6-minute feature shown later in the summer.

Backing the RC&D board and the camp were the three county governments and soil conservation districts, Tri-County Council, Maryland Forest and Parks Service, and the Soil Conservation Service. Employees of these and other agencies including the county school system served as instructors and counselors. Local businesses donated the \$100 tuition fee for each student.

The camp received outstanding reviews from kids, parents, and organizers. Dale Ann Proctor, a 17-year-old winner of several science fairs and an aspiring marine biologist, called the camp "one of the best I've ever been to. It covered a variety of topics—soils, geology, water, forests. The kids could see how all of it works together to make an environment like the bay even more beautiful and interesting than it normally is."

Katherine C. Gugulis,
public affairs specialist, SCS, College Park, Md.

State Forms Alliance for Environmental Education

For many years, teachers and conservationists in Pennsylvania had no organization through which to communicate and cooperate. By the midseventies, numerous individuals and groups were talking about the need for a formal organization.

Finally, in 1976, a meeting was called at Shippensburg State College, a task force was established, and the Pennsylvania Alliance for Environmental Education (PAEE) was born.

The first annual PAEE conference was held in 1977 and was attended by 70 people, compared to over 200 at the 1982 meeting. Participants at last year's conference came from many States, including South Carolina, Illinois, and California.

PAEE is divided into six regions. Members meet regionally throughout the year and work on conservation projects. They join with other groups to co-sponsor workshops and seminars on various conservation subjects. For example, they have conducted many "Project Learning Tree" sessions.

One region produced a conservation curriculum in cooperation with the State Regional Education Unit and several regions have produced local resource guides for teachers. PAEE members have visited different schools to learn from successful conservation education programs. PAEE has a statewide newsletter and some of the regions publish their own newsletter.

Membership is a good mix—predominantly educators with enough agency and industry people to allow an exchange of a broad range of ideas.

This exchange is important in many ways, but perhaps it helps everyone realize they are not alone in their efforts to teach the wise use of our natural resources.

Frederick E. Bubb,
public affairs specialist, SCS,
Harrisburg, Pa.



At left, SCS Area Soil Scientist Richard Hall explains differences in soil properties while showing students how to construct a miniature soil monolith. At right, student Sandy Weems sets her sights on a marker while learning to survey at the natural resources camp.



Students Build Land Lab with Community Help

Karen Kemp Arrington has a talent for getting involved. Over the past 2 years she has combined the efforts of hundreds of students in the high school where she teaches and other citizens of Frederick County, Md., in developing a multifaceted land laboratory on 3.5 acres on the school property.

Her students in the Agriculture/Horticulture Department at Brunswick High School conceived the idea for the land laboratory to provide a "hands-on" approach for them to develop knowledge and skills in land management. One of the students' goals for the project was to involve local community and civic organizations to emphasize a "unity approach to soil conservation and land management techniques." The first phase of the project included establishing an orchard on a terraced hillside and demonstration plots for studying tillage practices.

Almost everything that was required to create the land laboratory was provided by the students or donated in the form of labor or materials by private companies or individuals. Horticulture II and Landscaping students designed the site, and local and State agencies reviewed the plans, which was not required but was included as a learning experience.

Soil Conservation Service District Conservationist Owen Unangst and District Manager Dan Bard of the Catoctin Soil Conservation District (SCD) trained the Horticulture I students to survey and lay out the terrace system for the orchard. After a local farmer plowed and disked the terraces, students with hoes, rakes, wheelbarrows, lime, and fertilizer finished the terraces and seeded them with a fescue-clover mixture.

The students tested the soil and analyzed soil profiles in observation pits dug by local contractors. They selected plant varieties for the orchard according to soil requirements, regional hardiness, vigor, and pest resistance. More than 100 fruit trees, 500 berry plants, and 500 nursery stock plants, donated by Arrington's family's nursery, were planted on the contour.

Arrington's success is due in part to her belief that education is enhanced by actual experience. "One of the best ways of teaching is by 'hands-on' learning experience," she said.

Arrington keeps the involvement active by adding new components to the project. Work has begun on a nature trail to primarily benefit the neighboring elementary and middle schools. A small Christmas tree plantation will be added this year. A pond is in the design stage with assistance from the conservation district, and a demonstration plot for different varieties of grasses is another potential project. "As long as we have the land, there will be more projects each year," Arrington promises.

Because conservation is a major focus of the land lab, the Catoctin SCD and SCS have been regularly involved since the lab's inception in both classroom presentations and "hands-on" instruction. "Owen and Dan have become very familiar faces to my students," Arrington says. "The kids who have worked with them realize their level of technical skill. Many of the kids, after working on the project, have contacted the SCD or SCS for additional information."

The level of involvement achieved through the land lab by providing actual experience in conservation practices for students and their community has not gone unnoticed. Arrington's program is one of five examples featured in a nationally televised film produced by the Sperry-New Holland Company. Arrington and her students prepared an application to the National Future Farmers of America-Building Our American Communities Program and won first place in the State competition and placed second in the national competition. She was honored by the Maryland Association of Soil Conservation Districts last summer when she was presented with the State award for the National Association of Conservation Districts—Allis-Chalmers Teacher of the Year Program.

Gerald F. Talbert,
assistant executive secretary, Maryland State Soil Conservation Committee, Annapolis, Md.

Workshops Held to Teach Teachers

Many conservation districts throughout the country work with the Soil Conservation Service and other agencies to sponsor conservation education workshops for teachers. Workshops in two States, Missouri and Colorado, emphasize "hands-on" learning for the teachers and learning from the experiences of teachers who have won conservation education awards.

Missouri

A workshop in northwestern Missouri is held in a different location each year so that it is within commuting distance for the teachers who are attending. The 3-day event is sponsored by SCS, the Missouri Department of Conservation, and the soil and water conservation districts of Andrew, De Kalb, Daviess, Buchanan, Platte, Caldwell, Clay, Ray, and Clinton Counties. The 1981 workshop was held in Plattsburg, the 1982 workshop was held in Maryville, and in 1983, the workshop moves to Savannah.

SCS District Conservationist in Clinton County Buck Burch said lectures are minimized and "hands-on" learning emphasized.

"We feel it is important that teachers actively participate," explained Burch. "There's a big difference between telling someone about soil structure and getting your hands dirty and actually feeling it."

Learning centers around team building exercises, problem solving sessions, and lesson plan development—all aimed at group participation. Six major areas of study are:

1. Wildlife habitat investigations, illustrating how surroundings affect the type of wildlife supported in different areas and how varying that habitat affects the type of animal and plant life supported.
2. Soils investigations, driving home the point that soils are always evolving and are the basis for life.
3. Aquatic investigations, illustrating how water is the home of many animals and plants and is a basic life support system.
4. Forestry study, showing how soils,

slope, water, etc., affect the type and growth of our woodlands.

5. Environmental sensitivity, calling on each participant to develop an "environmental friend," write a poem or limerick about that friend, and share it with fellow participants.

6. Conservation practice investigation, showing how various erosion control practices slow or prevent erosion. Benefits of terraces, grass cover, mulch, and the hazards of bare soil are illustrated.

For a slight fee, Northwest Missouri State University at Maryville grants 1 hour of either graduate or undergraduate credit.

"We found that by offering college credit we really increased participation," Burch said. "Teachers can stay close to home and get college credit in only 3 days. It is good for them and us."

Gary Schroer, a school principal and one of the main backers of the 1981 workshop, was named Missouri's educator of the year in the 1982 National Association of Conservation Districts (NACD)-Allis-Chalmers Environmental Conservation Education Awards Program.

Colorado

Western State College in Gunnison, Colo., hosted its first annual Conservation Education Workshop for 47 teachers last July. The 3-day session was sponsored by the college, the Gunnison Soil Conservation District (SCD), the Colorado Association of Soil Conservation Districts (CASCD), the Colorado Department of Education and Division of Wildlife, and SCS.

"Our objectives were to broaden the knowledge and understanding among Colorado educators for natural resources and conservation," said Dan Parker, executive-secretary of CASCD. "We wanted to develop concepts, content, and a commitment toward the stewardship of the soil, water, and other natural resources."

The workshop featured presentations by six former Colorado award winners in the NACD-Allis-Chalmers conservation teacher of the year competition.

It also included an early morning, 65-mile bus ride from Gunnison to Lake City where the participants enjoyed a breakfast cookout at Lake San Cristobal prepared by supervisors of the Gunnison SCD. A presentation on the history and geology of the Lake City area followed.

Larry Stukey, principal of the Hinsdale County Elementary School and conservation teacher of the year in 1981, led a tour of the San Juan Academic Trail, an outdoor classroom on the banks of the Lake Fork of the Gunnison River. The outdoor area is used to teach math, history, social studies, science, and physical education.

Stops 1 and 2 on the trail are designed for reading and social studies. A log cabin and Indian tepee provide shelter and help create an atmosphere for historical readings.

Stop 3, the science area, has a water wheel, solar collector, and irrigation project.

"Our kids filed for water rights as a class project," said Stukey. "One younger student now owns a right of 20 cups per minute. He wasn't ready to calculate cubic feet per second."

Stop 4 on the trail consists of 14 physical fitness stations where students improve running skills and do situps, chin-ups, and other exercises.

A teacher at the Missouri workshop finds out the true meaning of "hands-on" learning during aquatic investigations.

Students spend 2 weeks of day trips each spring at the San Juan Academic Trail. Stukey says that he got the idea for the learning trail from the Soil Conservation Service's booklet entitled "Outdoor Classrooms."

Comments on the workshop were favorable. Marilyn Johnson, a teacher from Gunnison, said, "I gained knowledge that I hope to share with my students and fellow teachers."

Meg Gallagher with the Division of Wildlife at Montrose, said, "The enthusiasm of those teachers of the year rubbed off on me. I see that spark being transferred to many Colorado students this fall."

The conservation education workshop will be held again at Western State next July. Participants can earn 1 hour of graduate credit. Local organizations including soil conservation districts and rural electric co-ops are being encouraged to help sponsor interested teachers. The workshop tuition is approximately \$50 per student.

David C. White,
public affairs specialist,
SCS, Columbia, Mo.

Jerry D. Schwien,
public affairs specialist,
SCS, Denver, Colo.



A Little Money Buys a Lot of Learning

When urban encroachment doomed one of the few remnants of native prairie in Omaha, Nebr., teacher Ron Cisar and a group of junior high school students took their shovels to the site and moved several truckloads of it to a prairie preserve. The remaining prairie sod they trucked to the courtyard of their school, Lewis and Clark Junior High School. The Papio Natural Resources District (NRD) awarded Cisar \$50 to pay for a cedar fence and a sprinkler for the courtyard prairie.

"The nice thing about a prairie is that something's happening all year," Cisar says. "New flowers appear from early spring to late fall. The prairie plants start small, and by the end of the season are dominated by tall grasses such as big bluestem and indiagrass."

Cisar uses the mini-prairie to teach biology students about Nebraska's native vegetation, including how to classify the plants, the medicinal values of some of the plants, and the importance of preserving plant diversity.

Cisar received the mini-grant in April 1981, one of the first teachers in the Papio NRD to get such a grant. The Papio NRD copied the idea for mini-grants from the New Castle Conservation District in Delaware. Ironically, the mini-grant movement began much closer to Nebraska, in Oklahoma's Pontotoc County Conservation District (CD), in 1976. (See article in the August 1976 issue of *Soil Conservation*.)

Dan Sebert, then an education specialist for the Pontotoc CD and now education coordinator for the Oklahoma Conservation Commission (OCC), worked with the OCC to begin a mini-grants program. Familiar with the large grants given to colleges, Sebert thought of small grants, about \$50, to pay the bills that are big enough to stop elementary and high school teachers from teaching conservation.

Since then, through the National Association of Conservation Districts, the idea has been promoted at meetings and

workshops, and the program has spread to conservation districts throughout Oklahoma and in other States.

In Oklahoma, many of the projects are gardens. Sebert particularly remembers one garden for which a student contributed wildflower seeds harvested from plants which generations of her family had tended since her ancestor brought the seeds to Oklahoma by covered wagon.

The students in that project wanted to grow the wildflowers and sell the precious seeds to raise funds for other projects in their outdoor classroom. They used their \$50 grant mainly to buy tools, which they shopped for themselves. When the students harvested the seed from their first crop of wildflowers, they studied ways to sell the seeds and worked with a radio station to advertise their sales. With their profits they bought more equipment for their outdoor study site.

In Oklahoma, mini-grant guidelines require such student involvement and even suggest students help write the grant pro-

posal. The guidelines also require students to keep records of their project.

This year, the Papio NRD began distributing brochures to teachers and school administrators at meetings. The brochure describes the mini-grants and other ways in which the district will help teachers. Emmett Egr, information and education director for the Papio NRD, says districts should not overlook school principals, because they are the ones who will encourage teachers to apply for mini-grants.

Sebert adds that districts should be sure they are ready to handle a lot of applications before they announce the mini-grants program. They should also follow up each project by talking with teachers who use mini-grants. The mini-grants can open doors for further cooperation between districts and schools.

Donald L. Comis,
assistant editor, *Soil and Water Conservation News*, SCS, Washington, D.C.



Members of the Lewis and Clark Junior High School Wildlife and Conservation Club meet with their advisor, Ron Cisar, beside the mini-prairie they transplanted at their school.

Six Youths Win 4-H Natural Resources Awards

At the 61st National 4-H Congress in Chicago, Ill., November 28 to December 2, six 4-H'ers won awards for their activities in conserving natural resources. Each of the youths won a \$1,000 educational scholarship donated by the John Deere Foundation.

Kevin Donoho, 15, from Paw Paw, Ill., won an award for his role in applying extensive soil conservation practices on the family farm. He helped his father and grandfather, cooperators with the Lee County Soil and Water Conservation District (SWCD), to begin a program of minimum tillage on their rolling and sloping land. They also established a grassed waterway and constructed terraces. Donoho helped to seed alfalfa on an area of poor soil to protect it from erosion and to produce a cash crop.

"We had to take major steps to insure that the topsoil would stay in place since we cannot control the wind or rain," said Donoho. "I want to be assured that the land will be preserved for my family to produce crops today and for the generations to follow."

The alfalfa field, which Donoho helped to establish, and a windbreak and wildlife area, which he designed, were part of the 1980 fall tour sponsored by the local Agriculture Extension Council and the Lee County SWCD. For the last 3 years, Donoho has helped plan and direct the cleanup of the shoreline and land area at Shabbona Lake State Park along with other 4-H members. In April 1981, Donoho planned, organized, and directed the planting of 400 tree seedlings at the park. Fifty of the trees were donated by the Lee County SWCD.

An award winner from Norwood, N.C., Jarrod Hayes, 15, constructed a tabletop model to demonstrate soil conservation practices to his fellow 4-H'ers. Making a survey of soil erosion on farms, pollution in creeks, and other resource problems inspired Hayes to make the model.

Hayes led low-income youth in resource conservation activities at a day

camp for 2 consecutive years. He made a slide-tape program and other visual aids to use with the youth. Activities included visiting nature trails to increase the children's awareness of the environment.

The outstanding 4-H member's other activities included writing a radio announcement on resource conservation, which reached 15,000 people, and a conservation news article, which reached 45,000 people. Hayes has also designed a 1-acre wildlife sanctuary, which he still maintains; promoted recycling aluminum; and managed the thinning of a forest.

Joe Alexander, 16, of El Reno, Okla., won an award for leading other young people in establishing a 5-acre plot in the "Acres for Wildlife" program. Alexander says the plot started out at 1 acre and he and his fellow 4-H'ers have increased it to 5 acres.

Their first job on the wildlife refuge, which protects quail and other game birds, was planting native grasses. They also planted 600 trees donated by the State Forestry Department. In 1982, Alexander recorded sighting 32 different kinds of birds, 18 different kinds of mammals, and 10 kinds of pond and river inhabitants on the wildlife plot.

Alexander and his father planned and built two ponds which also benefit wildlife. One pond is for livestock and one for recreation. The recreation pond has a nesting island, and Alexander stocked the pond for a Boy Scout fishing derby.

By planting lovegrass, Alexander reclaimed 6 acres of sandy soil that previously would not hold seed. He also built and still maintains a 1-mile walking and jogging track and organized a countywide conservation and wildlife club.

Marie Bryner, 16, of Price, Utah, won an award for reclaiming swampland for cropland. In 1976, Bryner's family, with technical assistance from the Soil Conservation Service and cost-share assistance from the Agricultural Stabilization and Conservation Service, laid 1½ miles of perforated pipe through 60 acres of farmland. The effort lowered the water by 18 inches the first year. "It is good to know that the swampland will produce a crop again," said Bryner.

In 1981, she prepared 9 acres of previously unproductive land to grow oats. In 1982, she left the ground in summer fallow and has requested that a soil survey be made of the land. She plans to add the needed nutrients and turn the 9 acres into a wildlife refuge.

Bryner also leads a 4-H group in natural resource conservation activities. The group solicited funds from banks and businesses to buy current books on conservation for the local library.

During National Wildlife Week, Bryner prepared a display on the bald eagle, now an endangered species.

Award-winner Jim Wise, 15, from Douglas, Wyo., alerted the public to the effects of pesticides in duck nesting areas after he learned about a high concentration of pesticide in ducks in a central flyway. Wise prepared a demonstration of how pesticides accumulate in the food chain and why eating contaminated ducks might harm people.

Wise said that he has learned that the most common threat to wildlife is destruction of their habitat by humans.

Another of the winners, Patrick Filey, 15, of Canastota, N.Y., led 12 other 4-H'ers in cleaning up a neighborhood stream. On two successive Saturdays, the group and their leaders walked the stream and removed debris. They pulled out 19 old tires, countless cans and glass bottles, shovels, and fishing gear.

The 4-H'ers realized that debris was not the only problem in the stream. Sewage from new houses was running into the stream. The 4-H group held a meeting with the homeowners and explained what was happening to the stream and ways to help correct the problem.

"The landowners were receptive to our ideas and acted to change the situation," said Filey. "After only 1 year, my friends and I could see life returning to the stream. Once again it is popular for exploring and fishing."

These six youths are among the 673,000 4-H members nationwide who participated in the Conservation of Natural Resources Program.

Moving?

Send present mailing label and
new address including zip code to:

U.S. Department of Agriculture
Soil Conservation Service
P.O. Box 2890, Room 0054-S
Washington, D.C. 20013

Official Business
Penalty for private use, \$300



THIRD CLASS MAIL
BULK RATE

Students Bring Their Senses to Conservation Park

In Kent County on Maryland's Eastern Shore, farmers, business people, Ruritan Club members, Boy Scouts, and other interested citizens helped to build the State's only permanent display of agricultural conservation practices. They donated materials, equipment, and labor to build the 40-acre Turner Creek Conservation Park.

The Kent County Soil Conservation District (SCD) led the effort in cooperation with the Soil Conservation Service and other Federal, State, and local agencies. The park is on gently rolling land characteristic of most of the county. Two nature trails, one a mile long and the other one-half mile long, wind past a meadow, through a woodland, and past a freshwater marsh, creek, and 15 acres of no-till corn planted on the contour.

Soil Conservation Service district conservationist for Kent County, Ralph Timmons, says that sedimentation is a continuing problem in the county. The park, he says, was designed to show conservation practices that reduce the amount of soil that washes off the land and enters streams and rivers. The park features agricultural conservation practices as well as wildlife and forest management.

Her philosophy of "hands-on" learning led Mary Ann Skilling, a former Kent County SCD manager, to organize the conservation park where children can use all of their senses. They can see, hear, feel, and smell the woods, the creek, the marsh, and the meadow. With guidance, they can even taste some of the edible plants. On guided tours of the park, the children feel the bark of trees, compare the size and shape of leaves from different plants, look for signs of wildlife, and investigate the marsh.

On the no-till cropland, children can feel the cover of crop residue on the soil surface, which helps them to understand how it protects the soil from wind and water. Children can walk along a diversion to see how it is made to carry water across a slope to grassed waterways, which carry the water to protected outlets. They can run their fingers through the grass that filters soil from the runoff water.

About 300 Kent County fourth graders visited the park in 1982, the first year it was open. Other visitors included students from Cecil County, groups of school officials, and adult civic groups. Skilling says that the Kent County SCD invites all Maryland counties to bring their students to the conservation park.

Visitors can walk the nature trails following a map and trail guide available at the park entrance or arrange for guided tours by calling or visiting the Kent County SCD office in Chestertown.

"It is just as important for adults to see this park as for children," says Billy Sutton, chairman of the Kent County SCD. "We hope that visiting the conservation park will motivate some people to ask for conservation planning assistance."

Skilling says that the conservation park is an ongoing project and the SCD plans to install other practices as time and money allow. "For now," says Skilling, "we want to let people know the park is here and to thank all the people who helped to build it."

Nancy M. Garlitz,
associate editor, *Soil and Water Conservation News*, SCS, Washington, D.C.

Informal Committee Promotes Environmental Education

We're not alone in efforts in environmental education. Then, why work alone?

There is an informal group in Pennsylvania, the Interagency Committee on Environmental Education, that operates on this theory. Originally started by those with environmental education responsibility in several State agencies, it expanded to include a Federal agency—the Soil Conservation Service. Now 22 State, Federal, and statewide groups make up the committee.

The group has three purposes: to keep members informed of conservation education materials, activities, and programs; to increase cooperation and reduce duplication of effort among members; and to carry out major conservation projects. Requests from teachers for information about conservation education materials resulted in the present project, preparing the "Pennsylvania Resource Guide for Teachers." This 48-page document lists every agency and organization involved in conservation education in Pennsylvania. It lists materials, programs, and services.

Last year's project was a mailing of a sample kit of conservation education materials to all science, biology, and vocational agricultural teachers, grades 9 through 12, in Pennsylvania. Over 5,000 packets were mailed in this effort to place materials directly in the hands of teachers.

What is next year's project? At this time, no one knows. But when the need is determined, the Interagency Committee will find the solution.

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